UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/475,563	12/30/1999	DAVID P. WILLIAMS	RA-5281	6509

7590   08/12/2003

UNISYS CORPORATION
CHARLES A JOHNSON
POST OFFICE BOX 64942
MS 4773
ST PAUL, MN   551640942

EXAMINER
WOOD, WILLIAM H

ART UNIT	PAPER NUMBER
2124	

DATE MAILED: 08/12/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 07-01)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _03 June 2003_ .

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-34_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) _19-22_ is/are allowed.

6)☒ Claim(s) _1-18 and 23-34_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _30 December 1999_ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

    If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____ .

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

    a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)   4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)   5) ☐ Notice of Informal Patent Application (PTO-152)

3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .   6) ☐ Other: .

DETAILED ACTION

Claims 1-34 have been examined.

Drawings

1.   The drawings submitted 30 December 1999 were approved by the draft person.

Claim Rejections - 35 USC § 103

2.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness

rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section
> 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the
> subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill
> in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the
> invention was made.

4.   Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mann (USPN

5,978,902) in view of Ryan et al. (USPN 6,530,076).

In regard to claim 1, Mann disclosed the limitations:

- *A method for selectively collecting information from a plurality of logical segments in a*

  computing environment (column 1, lines 11-15; column 10, lines 15-67), the method

  comprising:

  - *controllably designating at least one of a plurality of data collection periods defining*

    temporal windows in which storage of the designated set of information is enabled

    (column 22, lines 33-35); and

  - *storing the designated set of information identified by the designated information*

    storage mode only during the temporal window corresponding to the designated data

    collection period (column 22, lines 33-35)

Mann did not explicitly state *controllably designating one of a plurality of information storage modes, wherein each of the information storage modes identifies a different set of information from the plurality of logical segments to be stored.* Ryan demonstrated that it was known at the time of invention to selectively trace various processor signals (column 6, line 66 to column 7, line 2; column 9, lines 16-18, lines 63-65; Figure 9; mode is a function of what is to be traced). It would have been obvious to one of ordinary skill in the art at the time of invention to implement Mann's tracing processor with selectively tracing various signals as found in Ryan's teaching. This implementation would have been obvious because one of ordinary skill in the art would be motivated to record only required signals to save processor work and memory space (Ryan: column 1, lines 40-52; column 2, lines 40-46).

In regard to claim 2, Mann and Ryan further disclosed the limitation *further comprising controllably designating an information retrieval mode, wherein retrieval of the stored set of information is enabled in response thereto* (Mann: column 31, lines 48-50 and 53-57).

In regard to claim 3, Mann and Ryan further disclosed the limitation *wherein controllably designating an information retrieval mode comprises substituting the designation of the information storage mode with the designation of the information retrieval mode* (Mann: column 31, lines 48-50 and 53-57).

In regard to claim 4, Mann and Ryan further disclosed the limitation *wherein controllably designating at least one of a plurality of data collection periods comprises controllably designating a data collection commencement event, wherein the data collection period commences upon recognition of the data collection commencement event* (Mann: column 22, lines 33-35).

In regard to claim 5, Mann and Ryan further disclosed the limitation *wherein controllably designating at least one of a plurality of data collection periods comprises controllably designating a data collection termination event, wherein the data collection period terminates upon recognition of the data collection termination event* (Mann: column 22, lines 33-35).

In regard to claim 6, Mann and Ryan further disclosed the limitation *further comprising dynamically reconfiguring the information storage modes to designate a different set of information from a different one of the plurality of logical segments to be stored* (Ryan: column 2, lines 40-46).

5.   Claims 7-18 and 23-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mann (USPN 5,978,902) in view of Ryan et al. (USPN 6,530,076) and in further view of Torrey et al. (USPN 6,145,123).

In regard to claim 7, Mann and Ryan did not explicitly state the limitation *further comprising dynamically reconfiguring the data collection periods to designate a different temporal window in which storage of the designated set of information is enabled.* Torrey demonstrated that it was known at the time of invention to dynamically designate windows of trace capture (Torrey: column 6, lines 55-65; column 7, lines 46-67; instructions for accessing breakpoint registers allow for dynamic reconfiguration; also Figure 4). It would have been obvious to one of ordinary skill in the art at the time of invention to implement Mann and Ryan's tracing system with dynamic reconfiguration of tracing window as found in Torrey's teaching. This implementation would have been obvious because one of ordinary skill in the art would be motivated to by the fact that Torrey is discussing a similar tracing processing system as Mann and both are using breakpoint registers (Mann: column

33-35; Torrey: column 6, line 56 to column 7, line 45) and both have a ITCR register (Torrey: column

9, lines 31-35).

In regard to claim 8, Mann, Ryan and Torrey further disclosed the limitations:

- *wherein controllably designating at least one of a plurality of data collection periods comprises controllably designating a data collection commencement event, wherein the data collection period commences upon recognition of the data collection commencement event;*

- *wherein controllably designating at least one of a plurality of data collection periods comprises controllably designating a data collection termination event, wherein the data collection period terminates upon recognition of the data collection termination event; and*

- *further comprising reconfiguring the data collection periods by dynamically reconfiguring at least one of the data collection event and the data termination event.*

Claim is rejected in the same manner as claims 4, 5 and 7 above.

In regard to claim 9, Mann, Ryan and Torrey disclosed the limitations:

- *A system for selectively collecting information in a computing environment having a plurality of functional modules, wherein each functional module is associated with time-varying operational information as each functional module operates, and wherein analysis of the operational information may be used to identify operational defects in the computing environment, the system comprising:*

- *a memory for storing the operational information associated with the functional modules;*

- *a dynamically-configurable write mode selection module coupled to a control interface to receive one of a plurality of selectable write mode identifiers, and to enable selected subsets of the operational information to be stored in the memory in response to the received write mode identifier; and*

- *a dynamically-configurable timing control module coupled to the control interface to receive one of a plurality of collection initiation identifiers and one of a plurality of collection termination identifiers, to enable storing of the selected subset of operational information into the memory upon activation of an initiation event corresponding to the received collection. initiation identifier, and to terminate storing of the selected subset of operational information into the memory upon activation of a termination event corresponding to the received collection termination identifier.*

Claim limitations correspond to claim 8, therefore rejection of claims 1, 4, 5, 7 and 8 is incorporated herein.

In regard to claim 10, Mann, Ryan and Torrey disclosed the limitations corresponding to claim 9 (claim 9 rejection incorporated herein). Ryan and Torrey did not explicitly state the limitation *wherein the dynamically-configurable write mode selection module comprises a write mode scan register that is loaded via a dynamic scan operation.* Torrey demonstrated that it was known at the time of invention to utilize scan registers for information (column 9, lines 31-35). It would have been obvious to one of ordinary skill in the art at the time of invention to implement Mann, Ryan and Torrey's registers as scan registers as found in Torrey's teaching. This implementation would have been obvious because one of ordinary skill in the art would be motivated to use a common method of register implementation.

In regard to claim 11, Mann, Ryan and Torrey disclosed the limitations corresponding to claim 9 (claim 9 rejection incorporated herein). Mann, Ryan and Torrey further disclosed the additional limitation *wherein the dynamically-configurable timing control module comprises a timing control scan register that is loaded via a dynamic scan operation* (Torrey: column 6, line 56 to column 7, line 67; column 9, lines 31-35; Mann: column 10, lines 15-67; ITCR register and D0-7 registers).

In regard to claim 12, Mann, Ryan and Torrey disclosed the limitations corresponding to claim 9 (claim 9 rejection incorporated herein). Mann, Ryan and Torrey further disclosed the additional limitation *wherein the dynamically-configurable write mode selection module further comprises means for enabling the selected subset of the operational information to be stored in the memory if the subset of operational information changes from a first defined time to a second defined time, in response to a corresponding write mode selection identifier* (Ryan: column 2, lines 40-46).

In regard to claim 13, Mann, Ryan and Torrey disclosed the limitations corresponding to claim 9 (claim 9 rejection incorporated herein). Mann, Ryan and Torrey further disclosed the additional limitation *wherein the dynamically-configurable write mode selection module further comprises means for enabling the selected subset of the operational information to be stored in the memory, if a current function value within the selected subset of operational information matches a predetermined function value, and if a current address value within the selected subset of operational information matches a predetermined address value, in response to a corresponding write made selection identifier* (Mann: column 10, lines 15-67; Torrey: column 31-35).

In regard to claim 14, Mann, Ryan and Torrey disclosed the limitations corresponding to claim 9 (claim 9 rejection incorporated herein). Mann, Ryan and Torrey further disclosed the additional

limitation *wherein the dynamically-configurable write mode selection module further comprises means for enabling the selected subset of the operational information to be stored in the memory if the subset of operational information is received from a predetermined one or more of the functional modules* (Ryan: column 9, lines 16-18).

In regard to claim 15, Mann, Ryan and Torrey disclosed the limitations corresponding to claim 9 (claim 9 rejection incorporated herein). Mann, Ryan and Torrey further disclosed the additional limitation *wherein the dynamically-configurable timing control module comprises a dynamically-scannable register coupled to the control interface to receive and store the collection initiation identifiers and the collection termination identifiers, wherein the dynamically-scannable register includes a plurality of outputs to provide capture nable/disable signals to enable storing of the selected subset of operational information into the memory upon activation of an initiation event corresponding to the collection initiation identifier, and to terminate storing of the selected subset of operational information into the memory upon activation of a termination event corresponding to the collection termination identifier* (Mann: column 19, lines 20-50).

In regard to claim 16, Mann, Ryan and Torrey further disclosed the limitations:

- *a data interface coupled to receive the operational information from the functional modules* (Ryan: Figure 9, elements 59 and 216); *and*
- *a multiplexing module coupled to the data interface to exclude the operational information external to the selected subset of operational information identified by the selectable write mode identifiers* (Ryan: Figure 9, elements 59, 208, 216 and 218).

In regard to claim 17, Mann, Ryan and Torrey did not explicitly state *further comprising a write data register coupled to the multiplexing module to receive and store the selected subset of operational information.* Official Notice is taken that it was known at the time of invention to utilize registers for storing or latching information or data. It would have been obvious to one of ordinary skill in the art at the time of invention to implement Ryan and Torrey's system of capturing trace data with a register for storing information going from Ryan's multiplexor to the Trace Ram (Figure 9). This implementation would have been obvious because one of ordinary skill in the art would be motivated by using some common easy to implement mechanism (a register latch) for bus 218.

In regard to claim 18, Mann, Ryan and Torrey further disclosed the limitation *further comprising a dynamically configurable read mode selection module coupled to the control interface to receive a selectable read mode identifier, and to enable the selected subset of operational information stored in the memory to be accessed* (Mann: column 31, lines 48-57; Torrey: column 9, lines 31-35).

In regard to claim 23, Mann, Ryan and Torrey disclosed the limitations corresponding to claim 9 (claim 9 rejection incorporated herein). Ryan and Torrey disclosed the limitation *wherein the computing environment is an integrated circuit, and wherein at least one of the plurality of functional modules are predetermined logical sections of the integrated circuit* (Ryan: column 9, lines 16-18).

In regard to claim 24, Mann, Ryan and Torrey further disclosed the limitation *wherein at least one of the plurality of functional modules are external to the integrated circuit* (Mann: column 7, lines 40-43).

In regard to claim 25, Mann, Ryan and Torrey disclosed the limitations:

- *A method for selectively collecting information from a plurality of functional modules in a computing environment, the method comprising:*

  - *designating one of n plurality of information storage modes, wherein each of the information storage modes identifies a different set of information from the plurality of functional modules to be stored;*

  - *designating one of a plurality of storage commencement events, wherein each of the storage commencement events identifies a different triggering event to enable storage of the designated set of information to begin;*

  - *designating one of a plurality of storage termination events, wherein each of the storage termination events identifies a different triggering event to discontinue storage of the designated set of information;*

  - *monitoring for activation of the designated storage commencement event;*

  - *enabling storage of the designated set of information, as governed by the designated information storage mode, upon recognition of the activation of the designated storage commencement event;*

  - *monitoring for activation of the designated storage termination event; and*

  - *disabling storage of the designated set of information upon recognition of the activation of the designated storage termination event.*

Claim limitations correspond to claim 8, therefore rejection of claims 1, 4, 5, 7 and 8 is incorporated herein.

In regard to claim 26, Mann, Ryan and Torrey further disclosed the limitation *wherein enabling storage of the designated set of information comprises storing the designated set of information in a*

memory, and wherein the method further comprises retrieving the set of information stored in the

memory (Mann: column 31, lines 48-50 and 53-57; Ryan: column 2, lines 40-46).

In regard to claim 27, Mann, Ryan and Torrey further disclosed the limitation *further comprising*

reconfiguring the designated information storage made to designate an information retrieval mode,

and wherein retrieving the set of information comprises retrieving the set of information from the

memory in response to the designation of the information retrieval mode (Mann: column 31, lines 48-

50 and 53-57; Ryan: column 2, lines 40-46).

In regard to claim 28, Mann, Ryan and Torrey further disclosed the limitation *wherein reconfiguring*

the designated information storage mode comprises dynamically scanning a retrieval mode

identification into a scan register to designate the information retrieval mode (Mann: column 31, lines

48-57).

In regard to claim 29, Mann, Ryan and Torrey further disclosed the limitation further comprising

reconfiguring the designated information storage mode to designate another one of the plurality of

information storage modes (Ryan: column 2, lines 40-46).

In regard to claim 30, Mann, Ryan and Torrey disclosed the limitations corresponding to claims 25

and 29 (claims 25 and 29 rejection incorporated herein). Mann, Ryan and Torrey did not explicitly

state the limitation *wherein reconfiguring the designated information storage mode comprises*

dynamically scanning a storage mode identification into a scan register to designate the information

storage mode. Torrey demonstrated that it was known at the time of invention to utilize scan registers

for information (column 9, lines 31-35). It would have been obvious to one of ordinary skill in the art

at the time of invention to implement Mann, Ryan and Torrey's registers as scan registers as found in

Torrey's teaching. This implementation would have been obvious because one of ordinary skill in the

art would be motivated to use a common method of register implementation.

In regard to claim 31, Mann, Ryan and Torrey further disclosed the limitation *further comprising*

reconfiguring the designated storage commencement event to designate another one of the plurality

of storage commencement events (Torrey: column 6, line 56 to column 7, line 67).

In regard to claim 32, Mann, Ryan and Torrey did not explicitly state *wherein reconfiguring the*

designated storage commencement event comprises dynamically scanning a storage

commencement identification into a scan register to designate the storage commencement event.

Torrey demonstrated that it was known at the time of invention to utilize scan registers for information

(column 9, lines 31-35). It would have been obvious to one of ordinary skill in the art at the time of

invention to implement Mann, Ryan and Torrey's registers as scan registers as found in Torrey's

teaching. This implementation would have been obvious because one of ordinary skill in the art

would be motivated to use a common method of register implementation.

In regard to claim 33, Mann, Ryan and Torrey further disclosed the limitation *further comprising*

reconfiguring the designated storage termination event to designate another one of the plurality of

storage termination events (Torrey: column 6, line 56 to column 7, line 67).

In regard to claim 34, Mann, Ryan and Torrey did not explicitly state wherein reconfiguring the

designated storage termination event comprises dynamically scanning a storage termination

identification into a scan register to designate the storage termination event. Torrey demonstrated

that it was known at the time of invention to utilize scan registers for information (column 9, lines 31-

35). It would have been obvious to one of ordinary skill in the art at the time of invention to implement

Mann, Ryan and Torrey's registers as scan registers as found in Torrey's teaching. This

implementation would have been obvious because one of ordinary skill in the art would be motivated

to use a common method of register implementation.

Allowable Subject Matter

6.   Claims 19-22 are allowable. The following is a statement of reasons for the indication of

allowable subject matter: Independent claim 19 contains the limitation *a dynamically-configurable*

read data register coupled to the memory to receive and temporarily store the selected subset of

operational information in response to the selectable read mode identifier which in conjunction with

the other limitations of claim 19 is not found or fairly suggested by the prior art of record. Claims 20-

22 are dependent on claim 19 and allowable for at least the above reasons.

Response to Arguments

7.   Applicant's arguments with respect to claims 1-34 have been considered but are moot in view
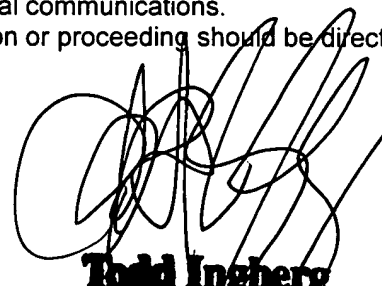
of the new ground(s) of rejection.

Correspondence Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William H. Wood whose telephone number is (703)305-3305. The examiner can normally be reached 7:30am - 5:00pm Monday thru Thursday and 7:30am - 4:00pm every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kakali Chaki can be reached on (703)305-9662. The fax phone numbers for the organization where this application or proceeding is assigned are (703)746-7239 for regular communications and (703)746-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-3900.

William H. Wood
August 4, 2003

Todd Ingberg
Primary Examiner
Group 2100